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Before the
FEDERAL COMMUNICATIONS COMMISSION Federal Communications Commission
Washington, D.C. 20554 Office of Secretary

In the Matter of

DSC COMMUNICATIONS CORPORATION

Petition for Amendment of the Commission's Rules
for Allocation of Radio Spectrum in the 2 GHz Band
for the Provision of Wireless Fixed Access Local
Loop Services

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) RM No. 8837
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PARTIAL OPPOSITION TO PETITION FOR RULEMAKING

THE WIRELESS CABLE ASSOCIATION
INTERNATIONAL, INC.

Paul J. Sinderbrand

Wilkinson, Barker, Knauer & Quinn
1735 New York Avenue, N.W.
Sixth Floor
Washington, D.C. 20006
(202) 783-4141

Its Attorneys

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EXECUTIVE SUMMARY

While WCA does not necessarily oppose the reallocation of some spectrum between 1.3 GHz and 2.7 GHz for wireless fixed access local loop (“WFA-LL”) service, the proposal advanced by DSC Communications Corporation (“DSC”) is seriously flawed.

DSC fails to even acknowledge that a portion of one of the bands it proposes for reallocation is utilized by grandfathered Multipoint Distribution Service (“MDS”) stations operating on 2156-2162 MHz in various markets across the country. The Commission has made clear that those users retain their primary status and must be fully protected from harmful interference. Yet, DSC has failed to provide any technical evidence whatsoever that its proposed co-channel interference protection rule will protect existing MDS facilities.

Similarly, several of the other frequency bands DSC is proposing for reallocation are adjacent to spectrum used by the wireless cable industry. Yet, DSC has provided the Commission with absolutely no technical evidence that the minimalistic adjacent channel interference protection rules proposed in the petition will protect the wireless cable industry from harmful interference. Indeed, because DSC is proposing no limitation on the EIRP of WFA-LL facilities and is proposing very loose limitations on out-of-band emissions, the adjacent channel interference approach suggested by DSC cannot possibly protect adjacent channel wireless cable facilities.

DSC is proposing a paired allocation plan that, while perhaps optimized for DSC’s vision of a Code Division Multiple Access WFA-LL service that can employ DSC’s existing equipment, fails to provide prospective licensees with sufficient flexibility to meet other needs. Rather than limit the reallocated bands solely for DSC’s implementation of a WFA-LL service, the Commission should allocate the spectrum to the General Wireless Communications Service, which affords licensees a large degree of flexibility in their use of spectrum. And, rather than pair reallocated bands as proposed by DSC, the Commission should make reallocated spectrum available on an unpaired basis, but employ a simultaneous multi-round auction to afford those needing paired spectrum an opportunity to meet their particular needs.

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**PARTIAL OPPOSITION TO
PETITION FOR RULEMAKING**

The Wireless Cable Association International, Inc. ("WCA"), by its attorneys and pursuant to Sections 1.4 and 1.405 of the Commission's Rules, hereby opposes in part the petition filed by DSC Communications Corporation ("DSC") proposing the reallocation of various frequency bands between 1.3 GHz and 2.7 GHz for wireless fixed access-local loop service ("WFA-LL").

Specifically, the Commission should reject those portions of DSC's petition that request reallocation of spectrum currently used by or adjacent to spectrum used by the wireless cable industry until such time as DSC demonstrates that such reallocation can be accomplished without causing harmful electrical interference to wireless cable operations. If the Commission elects to reallocate other spectrum in response to DSC's petition, it should do so in a manner that provides prospective licensees with sufficient flexibility to meet a variety of needs. Rather than limit the reallocated bands solely for the Code Division Multiple Access ("CDMA") WFA-LL service advocated by DSC, the Commission should

allocate the spectrum to the General Wireless Communications Service ("GWCS"), which affords licensees a large degree of flexibility in their use of spectrum. And, rather than pair reallocated bands as proposed by DSC, the Commission should make reallocated spectrum available on an unpaired basis, and employ a simultaneous multi-round auction to afford those needing paired spectrum an opportunity to meet their particular needs.

I. INTRODUCTION.

As the Commission is well aware, wireless cable is a service that utilizes spectrum allocated to the Multipoint Distribution Service ("MDS") and the Instructional Television Fixed Service ("ITFS") to distribute a multichannel video programming and ancillary services to subscribers.^{1/} To the consumer, wireless cable resembles cable television, but instead of coaxial or fiber optic cable, wireless cable uses over-the-air microwave radio channels to deliver its service offering to subscribers.^{2/} WCA is the principal trade association of the wireless cable industry. Its membership includes the operators of virtually all wireless cable systems in the United States, licensees of MDS and ITFS stations that provide transmission capacity to wireless cable systems, program suppliers and equipment manufacturers. Insofar as the DSC petition proposes to reallocate for WFA-LL spectrum that

^{1/}See, e.g. *Request For Declaratory Ruling on the Use of Digital Modulation by Multipoint Distribution Service and Instructional Television Fixed Service Stations*, Declaratory Ruling and Order, FCC 96-304, at 2 n.3 (rel. July 10, 1996)[hereinafter cited as "*Digital Declaratory Ruling*"].

^{2/}See *id.*

is currently allocated to the MDS or is adjacent to the MDS allocation, WCA has a vital interest in this proceeding.

At the outset, it must be emphasized that WCA does not necessarily object to the concept of reallocating spectrum between 1.3 GHz and 2.7 GHz that could be used for WFA-LL.^{3/} WCA is gravely concerned, however, that DSC's proposal fails to adequately protect the wireless cable industry from harmful interference. Given the importance that the Commission has placed on the wireless cable industry's role in the marketplace and the regulatory efforts undertaken by the Commission to promote the success of wireless cable,^{4/} it is unthinkable that the Commission would permit WFA-LL or any other new service offering to degrade wireless cable's already scarce spectrum allocation. Yet, adoption of DSC's proposal would have just that result.

^{3/}However, as noted *infra* at Section II.B, WCA believes that the rules accompanying any reallocation of spectrum should provide sufficient flexibility for licensees to engage in a variety of service offerings, not just WFA-LL as it is envisioned by DSC.

^{4/}See, e.g. *Digital Declaratory Ruling; Amendment of Parts 21, 43, 74, 78, and 94 of the Commission's Rules Governing Use of the Frequencies in the 2.1 and 2.5 GHz Bands Affecting: Private Operational-Fixed Microwave Service, Multipoint Distribution Service, Multichannel Multipoint Distribution Service, Instructional Television Fixed Service, & Cable Television Relay Service*, 10 FCC Rcd 7074 (1995)[hereinafter cited as *Second Order on Reconsideration*"] *aff'd*, FCC 96-130 (released April 1, 1996); *Amendment of Parts 21 and 74 of the Commission's Rules With Regard to Filing Procedures in the Multipoint Distribution Service and in the Instructional Television Fixed Service and Implementation of Section 309(j) of the Communications Act -- Competitive Bidding*, 10 FCC Rcd 9589 (1995)[hereinafter cited as "*MDS Auction Order*"]; *on recon.*, 10 FCC Rcd 13821 (1995) See also *Implementation of Section 19 of the Cable Television Consumer Protection and Competition Act of 1992: Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming*, 9 FCC Rcd 7442, 7486 (1994).

Moreover, WCA believes that the Commission should afford potential licensees of any bands that are reallocated with the flexibility to employ WFA-LL approaches that differ from DSC's, and to offer services other than WFA-LL. Faced with the convergence of voice, video and data services, wireless cable operators are exploring a variety of new service offerings necessary to remain competitive. Some in the wireless cable industry believe it may be necessary to secure access to certain of the bands identified in DSC's petition in order to provide those services, given the capacity shortage faced by many wireless cable systems. By reallocating spectrum for general wireless use, rather than specifically for DSC's concept of a CDMA-based WFA-LL that is apparently optimized to employ DSC's existing equipment, the Commission will afford wireless cable operators the opportunity to meet those needs.

II. DISCUSSION.

A. DSC's Proposal Fails To Provide Sufficient Protection To MDS Facilities.

In WCA's view, the greatest single flaw in DSC's proposal is its failure to adequately address the potential for interference to existing services utilizing the 1.3 GHz to 2.7 GHz band. Simply stated, the Commission should not even consider a reallocation of spectrum unless and until DSC can demonstrate that existing uses, including existing MDS uses, will be fully protected from interference.

The potential adverse impact on the wireless cable community should be obvious. MDS and ITFS licensees currently operate in the 2150 MHz to 2162 MHz and 2500 MHz

to 2690 MHz bands. DSC's Channel Plans B, C, D and E all propose to utilize frequencies in the 2150 MHz to 2162 MHz band used by the MDS or adjacent to that band.^{5/} While DSC pays lip service to the philosophy that "where coexistence with other services is required, the appropriate technical rules will need to be modified to ensure adequate protections,"^{6/} DSC provides no evidence whatsoever that the requisite protection can be afforded to the MDS. Indeed, DSC's petition does not even mention the MDS, much less present a plan for protecting the numerous MDS stations across the nation operating in the 2150-2162 MHz band from interference that could result from the introduction of DSC's CDMA-based WFA-LL service offering.

Ironically, on the day before the Commission requested comment on DSC's proposal, the Commission released a decision that emphasizes the importance of assuring that MDS and ITFS facilities employed by the wireless cable industry be protected from harmful electrical interference and provides guidance for handling DSC's petition. In July 1995, WCA and 98 other entities involved in the wireless cable industry submitted to the Commission a petition proposing interim policies for the introduction of digital technology

^{5/}When the Commission designated the 2160 MHz to 2162 MHz band for emerging technology use, it stated with crystalline clarity that existing MDS facilities in the 2156-2162 MHz band would retain their primary status and be entitled to interference protection. *Redevelopment of Spectrum to Encourage Innovation in the Use of New Telecommunications Technologies*, 8 FCC Rcd 6589, at n. 3 (1993). The importance of retaining MDS use of those channels was reinforced recently when the Commission refused to reallocate them for PCS use. *See Allocation of Spectrum Below 5 GHz Transferred from Federal Government Use*, 10 FCC Rcd 4769 (1995).

^{6/}DSC Petition, at 36.

employing Quadrature Amplitude Modulation ("QAM") and Vestigial Sideband ("VSB") modulation schemes.^{7/} The premise of that petition was that since use of these modulation schemes is no more likely to cause interference to nearby facilities than the use of analog modulation, the Commission could authorize digital operations in the MDS and ITFS so long as the current MDS and ITFS interference protection requirements are met.^{8/} That petition was accompanied by detailed technical data derived from tests of potential cochannel and adjacent channel interference from digital transmissions using 8-VSB and 64-QAM densities to analog wireless cable operations, tests which demonstrated that such modulation densities could be employed without causing any additional interference.

On July 10, 1996, the Commission released a *Declaratory Ruling and Order* establishing policies to govern the transition of MDS stations to new technologies, and the approach it took there should govern here. Based on the detailed technical data submitted to the Commission, the Commission found that it could permit an applicant to employ up to 8-VSB or 64-QAM if the applicant demonstrated that the proposed facility would not result

^{7/}See Petition for Declaratory Ruling, DA 95-1854 (filed July 13, 1995).

^{8/}Those requirements, set forth at Sections 21.902 and 74.903 of the Commission's Rules, generally require that an applicant for a new station or a major modification of an existing station demonstrate that as a result of the proposed facility the desired-to-undesired signal ratio will not exceed 45 dB cochannel or 0 dB adjacent channel at any location within the protected service area of nearby MDS and ITFS stations. The Commission has recently adopted a somewhat different approach for protecting those relatively few new MDS stations authorized following the MDS auctions, requiring that they be protected to a power flux density of -73 dBw/m² at the boundary of their protected service areas. See *MDS Auction Order*, 10 FCC Rcd at 9617.

in the desired-to-undesired (“D/U”) signal ratio falling below 45 dB cochannel or 0 dB adjacent channel at any point within the 3848 square mile protected service area of nearby stations. *However, because of the lack of definitive test data, the Commission refused to adopt interim policies governing higher densities on QAM and VSB or other modulation techniques. Rather, the Commission indicated in no uncertain terms that the burden is on the proponent of any new technology to demonstrate that it will provide interference protection equivalent to that afforded under the current rules.*^{9/}

Without doubt, DSC has failed to carry this burden; indeed, while DSC proposes minimalistic cochannel and adjacent channel interference protection standards,^{10/} it has presented the Commission with no test data establishing that application of those standards to CDMA-based WFA-LL will result in interference protection for MDS stations equivalent to that afforded under the current 45 dB cochannel and 0 dB adjacent channel D/U ratios.

That failure is hardly surprising, for WFA-LL systems operating as proposed by DSC would almost certainly cause interference to wireless cable operations. The Commission should note, for example, that DSC is proposing no restriction on the effective radiated power at which WFA-LL systems can operate (other than at the boundary of the WFA-LL service area),^{11/} and has advocated an extremely loose spectral mask. ^{12/} Obviously, this

^{9/}See *Digital Declaratory Ruling*, at ¶¶ 12, 14-1, 45-46.

^{10/}See DSC Petition, at 36-37.

^{11/}See *id.* at 35. Although DSC proposes that the predicted and measured median field strength of a WFA-LL system should be limited to 47 dBuV/m at the boundary of its service

combination of unlimited power and extensive out-of-band emissions is a prescription for disaster to those MDS licensees forced to operate using frequencies adjacent to those used by WFA-LL. Although testing is necessary to determine precisely what power and spectral mask limitations on WFA-LL would be necessary to assure MDS licensees protection from CDMA-based WFA-LL equivalent to that they receive from adjacent channel analog, 8-VSB and 64-QAM systems, logic dictates that more stringent limitations than proposed by DSC are essential.

In short, there is much testing to be done before the Commission can seriously consider reallocating spectrum in the vicinity of the MDS allocation for WFA-LL. At present, the record is devoid of any evidence that Channel Plans B, C, D, and E advocated by DSC can be implemented without causing massive interference to the wireless cable industry. Thus, if the Commission is disposed towards moving forward with a spectrum allocation in response to DSC, it should limit that allocation to frequencies not adjacent to the MDS and ITFS allocations unless and until DSC can provide test data establishing that CDMA-based WFA-LL can be implemented while still affording MDS licensees protection equivalent to that they receive today.

area, that limitation will provide little solace to wireless cable system operators subjected to unlimited power levels in areas away from the border of the WFA-LL service area.

^{12/}See DSC Petition, at 36-37. DSC's proposed mask of 45 dB down at $f_0 \pm (2.5 \times \text{channel bandwidth})$ is far less rigorous than even the less restrictive mask adopted for MDS and ITFS licensees operating using digital modulation. See *Digital Declaratory Ruling*, at ¶ 25.

B. If The Commission Elects To Reallocate Any Other Frequency Bands Addressed By DSC, It Should Provide For Flexible Use.

If the Commission elects to reallocate some of the other frequency bands addressed in the DSC petition, WCA urges the Commission to afford licensees the flexibility to utilize that spectrum for any one of a number of services, not just WFA-LL as envisioned by DSC. To achieve that objective, the Commission should not create a new WFA-LL service, but instead reallocate any spectrum to the GWCS, which affords licensees a great deal of flexibility in their use of spectrum.

As a result of the Telecommunications Act of 1996 and the Commission's own initiatives, the Commission has recognized that service providers will be required to provide a full panoply of services, and has encouraged the flexible use of spectrum.^{13/} The same

^{13/}*See, e.g. Amendment of the Commission's Rules to Permit Flexible Service Offerings in the Commercial Mobile Radio Service*, WT Docket No. 96-6, FCC 96-283, at ¶¶ 10-25 (rel. Aug. 1, 1996); *Rulemaking to Amend Parts 1, 2, 21 and 25 of the Commission's Rules to Redesignate the 27.5 - 29.5 GHz Frequency Band, to Reallocate the 29.5 - 30.0 GHz Frequency Band, to Establish Rules and Policies for Local Multipoint Distribution Service and for Fixed Satellite Services*, CC Docket No. 92-297, FCC 96-311 (rel. July 22, 1996); *Amendment of Part 95 of the Commission's Rules to Allow Interactive Video and Data Service Licensees to Provide Mobile Service to Subscribers*, 11 FCC Rcd 6610 (1996); *Replacement of Part 90 by Part 88 to Revise the Private Land Mobile Radio Services and Modify the Policies Governing Them*, PR Docket No. 92-235, DA 95-2354, 1 CR 838 (rel. Nov. 20, 1995); *Allocation of Spectrum Below 5 GHz Transferred from Federal Government Use*, 11 FCC Rcd 624 (1995). *See also* "To Loop or Not to Loop: Is That The Question?," *Speech by Reed Hundt Before the Cellular Telecommunications Industry Association* (March 26, 1996)("We should also promote competition by guaranteeing spectrum flexibility for all licenses. The markets, not bureaucrats, will tell you what to do with the spectrum."); "The Future of Competition in Communications," *Speech by Reed Hundt Before The Washington Research Group Third Annual Telecom Workshop* (Feb. 2, 1996)("Our spectrum policy should be to . . . provide wide latitude for market forces to guide

approach should hold here. If the Commission reallocates spectrum in the bands identified by DSC, it should craft a regulatory environment in which any reallocated frequency bands can be used for services other than just WFA-LL. The most efficient way to accomplish that is to reallocate the spectrum to GWCS, a service where licensees can engage in any fixed or mobile service other than broadcast, radiolocation or satellite service.^{14/}

For similar reasons, WCA disagrees with the paired band plan approach advocated by DSC. While paired bands of the nature proposed by DSC may be necessary for implementing CDMA-based WFA-LL utilizing existing equipment, the Commission should

that spectrum to its highest-valued use.”); “A Roadmap to More Competition and Less Regulation,” *Speech by Rachelle B. Chong Before the United States Telephone Ass’n Nat’l Issues Conference* (Jan. 30, 1996)(“I would like to see your companies, and your competitors, grow into more well-rounded, full service providers offering consumers a package of communications services. . . . The paths that deliver these communications services may be wired, wireless, or both.”); “A Camelot Moment -- the Telecommunications Act of 1996,” *Remarks of Rachelle B. Chong before the Federal Communications Bar Ass’n Midwest Chapter* (Feb. 15, 1996)(“Providers will not fit neatly into traditional categories such as local exchange carrier, cable, cellular, or long distance company. Instead, they will likely evolve into full service communications companies, offering consumers a tempting smorgasbord of services.”).

Congressional leaders have also recognized the importance of permitting licensees the ability to utilize their spectrum for varied services. Senator Pressler, for example, recently noted that “Government policy must allow multiple, more intensive use of radio frequency resources where there is no perceptible adverse technical impact. . . . Greater flexibility is a public interest win-win situation -- an option that benefits all involved and affords the general public both better service and more communications options.” Cong. Rec. S4930 (May 9, 1996).

^{14/}*Allocation of Spectrum Below 5 GHz Transferred from Federal Government Use*, 11 FCC Rcd 624, 630-631 (1995)[hereinafter cited as “GWCS Second Report and Order”].

recognize that there may be potential users of this spectrum that desire unpaired spectrum or different pairings of bands.

Offering applicants the option of securing unpaired spectrum will promote spectrum efficiency by allowing service providers to secure bandwidth closely tailored to their chosen technology and market demand. Fortunately, because the Commission likely will be employing auctions to award authorizations in these bands, the Commission can avoid unnecessarily precluding valuable services that require bandwidth in configurations other than that proposed by DSC. WCA supports the use simultaneous, multiround auctions to award these authorizations, with one caveat. The Commission should restructure its bid withdrawal provisions so that an applicant needing more than one band in a service area ^{15/}

^{15/}To further promote the greatest demand for this spectrum, the Commission should conduct auctions for any reallocated bands using service areas that maximize the ability of bidders to secure the channel capacity they need to meet their varied needs. The desire of wireless cable operators to perhaps incorporate these bands into their service offerings will be enhanced by establishing service areas that are co-terminus with the service areas afforded MDS licensees. The Commission has recently determined that it will award future MDS licenses based on Rand McNally Basic Trading Areas ("BTAs"). *See Amendment of Parts 21 and 74 of the Commission's Rules With Regard to Filing Procedures in the Multipoint Distribution Service and in the Instructional Television Fixed Service*, FCC 95-230, MM Docket No. 94-131, at ¶¶ 34-37 (rel. June 30, 1995). Just like WCA has explained in full in its pending petition for reconsideration of the *GWCS Second Report and Order*, use of any area other than BTAs for the licensing of the bands identified by DSC will force wireless cable operators to bid for rights in areas where they cannot use that spectrum to provide services complementary to wireless cable. *See* Petition of WCA for Reconsideration, ET Docket No. 94-32, at 3-6 (filed Sept. 8, 1995). Since the Commission has been employing BTAs for many services of late, WCA suspects that others will share a similar desire for the use of BTAs in licensing this spectrum. Thus, WCA disagrees with DSC that cellular-like MSAs and RSAs should be employed. *See* DSC Petition, at 34-35. Rather, WCA supports the use of BTAs as the geographic area for licensing the frequency bands in issue.

can withdraw a high bid for a band in that service area without penalty if it ceases bidding on other bands in the same market. To take advantage of this right to withdraw a high bid after conclusion of a round, the bidder should be required to have been an active bidder^{16/} in the prior round on more than one license for the service area, and should be required to have been the high bidder on at least one license at the close of that prior round. When these circumstances are met, the bidder should be permitted to withdraw its high bid before the start of the next round, but in doing so should forfeit its right to bid in subsequent rounds for any license in that particular service area. In this way, a bidder needing more than one band for its planned service will not be harmed if it cannot acquire all of the needed bandwidth at an acceptable price.


^{16/}In other words, even if the bidder was not the high bidder for that license, it must have made a bid during the round that exceeded the minimum acceptable bid for the round.

III. CONCLUSION.

In conclusion, DSC's petition should be dismissed at least insofar as it proposes to reallocate spectrum currently allocated to, or adjacent to spectrum allocated to, the MDS. If the Commission chooses to reallocate other spectrum in response to DSC's petition, it should do so in a manner that maximizes the flexibility of licensees to engage in a variety of services, not just WFA-LI .

Respectfully submitted,

WIRELESS CABLE ASSOCIATION
INTERNATIONAL, INC.

By: 
Paul J. Sinderbrand

Wilkinson, Barker, Knauer & Quinn
1735 New York Avenue, N.W.
Sixth Floor
Washington, D.C. 20006
(202) 783-4141

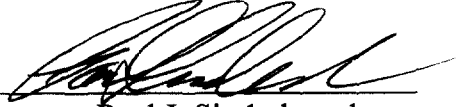
Its attorneys

August 12, 1996

CERTIFICATE OF SERVICE

I, Paul J. Sinderbrand, hereby certify that the foregoing Partial Opposition to Petition for Rulemaking was served this 12th day of August, 1996 by depositing a true copy thereof with the United States Postal Service, first class postage prepaid, addressed as follows:

James L. Donald
DSC Communications Corporation
1000 Coit Road
Plano, TX 75075-5813


Paul J. Sinderbrand

August 12, 1996